

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 to 35 (canceled)

Claim 36. (currently amended) A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle, characterized in that at least a part disposed at an internal portion of the immersion nozzle which is brought into contact with the molten steel is formed of a refractory having a desulfurizing ability, wherein the refractory comprises 15 to 40 mass % of C.

Claim 37. (original) The method according to claim 36, wherein the molten steel is poured into the mold without feeding an Ar gas to the molten steel flowing through a molten-steel introducing port of the immersion nozzle.

**Claim 38. (original)** The method according to Claim 36, wherein, when the molten steel is an Al-killed steel containing no Ca, continuous casting is performed by feeding an Ar gas into the immersion nozzle at a flow rate of 3 NL/min or less (including 0).

**Claim 39. (currently amended)** A method for continuous casting of steel, comprising supplying molten steel into a mold using an immersion nozzle for continuous casting,

characterized in that a gas having a desulfurizing ability is supplied ~~[[in]]~~ into a sidewall portion of the immersion nozzle so as to be injected into a molten-steel introducing port thereof from an inner wall surface of the immersion nozzle, whereby part of the molten steel flowing through the molten-steel introducing port is desulfurized, said part of the molten steel being present at an inner wall surface portion of the immersion nozzle.

**Claim 40. (original)** The method according to claim 39, wherein the gas having a desulfurizing ability is at least one gas of Mg gas, Ca gas, Mn gas, and Ce gas.

**Claim 41. (currently amended)** A method for continuous casting of steel, comprising supplying molten steel into a mold using an immersion nozzle for continuous casting,

characterized in that at least one gas of Mg gas, Ca gas, Mn gas, and Ce gas is supplied [[in]] into a sidewall portion of the immersion nozzle so as to be injected into a molten-steel introducing port thereof from an inner wall surface of the immersion nozzle, and the gas is supplied to the molten steel flowing through the molten-steel introducing port.

**Claim 42. (original)** A method for continuous casting of steel, comprising supplying molten steel into a mold using an immersion nozzle for continuous casting,

characterized in that the immersion nozzle is formed of a refractory material and a powdered metal having a desulfurizing ability, and part of the molten steel flowing through a molten-steel introducing port of the immersion nozzle is desulfurized by a gas having a desulfurizing ability generated from the powdered metal by heat of the molten steel, said part of

the molten steel being present at an inner wall surface portion of the immersion nozzle.

**Claim 43. (original)** The method according to claim 42, wherein the powdered metal having a desulfurizing ability is at least one powdered metal of Mg, Ca, Mn, and Ce, and at least one gas of Mg gas, Ca gas, Mn gas, and Ce gas is generated by heat of the molten steel.

**Claim 44. (original)** A method for continuous casting of steel, comprising supplying molten steel into a mold using an immersion nozzle for continuous casting,

characterized in that the immersion nozzle is formed of a refractory material and at least one powdered metal of Mg, Ca, Mn, and Ce, and at least one gas of Mg, Ca, Mn, and Ce generated from the powdered metal by heat of the molten steel is injected into a molten-steel introducing port so as to be supplied to the molten steel flowing therethrough.

**Claim 45. (original)** The method according to claim 43 or 44, wherein the powdered metals of Mg, Ca, Mn, and Ce have a particle size of 0.1 to 3 mm, and the content of said at least one powdered metal of Mg, Ca, Mn, and Ce in the immersion nozzle is 3 to 10 mass percent.

**Claim 46. (canceled)**

**Claim 47. (currently amended)** A method for continuous casting of steel, comprising supplying molten steel into a mold using an immersion nozzle, characterized in that at least a part disposed at an internal portion of the immersion nozzle which is brought into contact with the molten steel is formed of a refractory which comprises a refractory material including 15 to 40 mass % of C, an oxide and a component to reduce the oxide, the oxide containing an alkaline earth metal.

**Claim 48. (previously presented)** The method according to claim 47, characterized in that the oxide containing an alkaline earth metal primarily comprises MgO, and the component reducing

the oxide is at least one metal selected from the group consisting of Al, Ti, Zr, Ce and Ca.

**Claim 49. (previously presented)** The method according to claim 48, characterized in that the content of the MgO in the refractory is 5 to 75 mass percent, and the content of said at least one metal selected from the group consisting of Al, Ti, Zr, Ce and Ca is 15 mass percent or less.

**Claim 50. (canceled)**

**Claim 51. (canceled)**

**Claim 52. (currently amended)** The method according to claim 48 ~~or 50~~, characterized in that the oxide containing an alkaline earth element contains CaO.

**Claim 53. (previously presented)** The method according to claim 52, characterized in that the content of the CaO in the refractory is 5 mass percent or less.

**Claim 54. (currently amended)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle, characterized in that at least a part disposed at an internal portion of the immersion nozzle which is brought into contact with the molten steel is formed of a refractory which comprises a refractory material including 15 to 40 mass % of C, MgO and an Al metal.

**Claim 55. (previously presented)** The method according to claim 54, characterized in that the content of the MgO in the refractory is 5 to 75 mass percent, and the content of the Al metal is 1 to 15 mass percent.

**Claim 56. (previously presented)** The method according to claim 55, characterized in that the content of the Al metal in the refractory is 2 to 15 mass percent.

**Claim 57. (previously presented)** The method according to claim 56, characterized in that the content of the Al metal in the refractory is 5 to 10 mass percent.

Claim 58. (canceled)

Claim 59. (canceled)

Claim 60. (currently amended) The method according to ~~any one of claims~~ claim 54 ~~or 58~~, characterized in that the refractory material further includes CaO.

Claim 61. (previously presented) The method according to claim 60, characterized in that the content of the CaO in the refractory is 5 mass percent or less.

Claim 62. (currently amended) The method according to any one of claims 47, 48[[,]] and 54 ~~and 58~~, characterized in that the refractory material further includes at least one compound selected from the group consisting of  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and  $\text{TiO}_2$ .

Claim 63. (previously presented) The method according to claim 52, characterized in that the refractory material further includes at least one compound selected from the group consisting of  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and  $\text{TiO}_2$ .



**Claim 64. (currently amended)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle, characterized in that at least a part disposed at an internal portion of the immersion nozzle which is brought into contact with the molten steel is formed of a refractory which comprises a refractory material including 15 to 40 mass % of C, spinel ( $\text{MgO} \cdot \text{Al}_2\text{O}_3$ ) and at least one metal selected from the group consisting of Al, Ti, Zr, Ce and Ca.

**Claim 65. (previously presented)** The method according to claim 64, characterized in that the content of the spinel ( $\text{MgO} \cdot \text{Al}_2\text{O}_3$ ) in the refractory is 20 to 99 mass percent, and the content of said at least one metal selected from the group consisting of Al, Ti, Zr, Ce and Ca is 15 mass percent or less.

**Claim 66. (canceled)**

**Claim 67. (canceled)**

**Claim 68. (currently amended)** The method according to claim 64 ~~or 66~~, characterized in that the refractory material further includes CaO.

**Claim 69. (previously presented)** The method according to claim 68, characterized in that the content of the CaO in the refractory is 5 mass percent or less.

**Claim 70. (currently amended)** The method according to claim 64 ~~or 66~~, characterized in that the refractory material further includes at least one compound selected from the group consisting of MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, ZrO<sub>2</sub> and TiO<sub>2</sub>.

**Claim 71. (currently amended)** The method according to any one of claims 47, 48, ~~[[50,]]~~ 54 ~~[[, 58,]]~~ and 64 ~~and 66~~, characterized in that the refractory material further includes at least one compound selected from the group consisting of MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, ZrO<sub>2</sub> and TiO<sub>2</sub>, and the refractory is disposed at an internal portion of the nozzle which is brought into contact with the molten steel.

**Claim 72. (previously presented)** The method according to any one of claims 47, 48, 54 and 64, characterized in that the refractory material further includes at least one compound

selected from the group consisting of MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, ZrO<sub>2</sub> and TiO<sub>2</sub>, and the refractory has a desulfurizing ability.

**Claim 73. (currently amended)** A method according to any one of claims 47, 48, [[50,]] 54 [[, 58,]] and 64 ~~and 66~~, wherein the refractory material further includes at least one compound selected from the group consisting of MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, ZrO<sub>2</sub> and TiO<sub>2</sub>, and wherein the immersion nozzle further comprises a supporting refractory which supports said refractory.

**Claim 74. (currently amended)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle, characterized in that a molten-steel introducing port is formed to inject a gas having a desulfurizing ability from inside of a sidewall portion and via an inner wall surface thereof, part of the molten steel flowing through the molten-steel introducing port is desulfurized by the injected gas having a desulfurizing ability, said part of the molten steel being present at the inner wall surface portion.

**Claim 75. (previously presented)** The method according to claim 74, characterized in that the gas having a desulfurizing ability is at least one gas selected from the gas consisting of Mg gas, Ca gas, Mn gas and Ce gas.

**Claim 76. (currently amended)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle, characterized in that a molten-steel introducing port is formed to inject at least one gas selected from the gas consisting of Mg gas, Ca gas, Mn gas and Ce gas from inside of a sidewall portion and via an inner wall surface of the molten steel introducing port, wherein said at least one gas is injected to the molten steel flowing through the molten steel introducing port.

**Claim 77. (previously presented)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle having a molten-steel introducing port, characterized in that the immersion nozzle is formed of a refractory material and a powdered metal having a desulfurizing

ability, and part of the molten steel flowing through the molten-steel introducing port is desulfurized by a gas having a desulfurizing ability generated from the powdered metal by the heat of the molten steel, said part of the molten steel being present at the inner wall surface portion of the molten-steel introducing port.

**Claim 78. (previously presented)** The method according to claim 77, characterized in that the powdered metal having a desulfurizing ability is at least one powdered metal selected from the group consisting of Mg, Ca, Mn and Ce; and at least one gas selected from the group consisting of Mg, Ca, Mn and Ce is generated by the heat of the molten steel.

**Claim 79. (previously presented)** A method for continuous casting of steel comprising supplying molten steel into a mold using an immersion nozzle having a molten-steel introducing port, characterized in that the immersion nozzle is formed of a refractory material and at least one powdered metal selected from the group consisting of Mg, Ca, Mn and Ce, and at least one gas selected from the group consisting of Mg gas, Ca gas, Mn gas and

Ce gas generated from said at least one powdered metal by the heat of the molten steel is supplied to the molten steel flowing through the molten-steel introducing port.

**Claim 80. (previously presented)** The method according to claim 78 or 79, characterized in that the at least one powdered metal selected from the group consisting of Mg, Ca, Mn and Ce has a particle size of 0.1 to 3 mm; and the content of said at least one powdered metal selected from the group consisting of Mg, Ca, Mn and Ce in the immersion nozzle is 3 to 10 mass percent.